

## FUEL CELL STACK MONITORING AND SYSTEM CONTROL

Abstract of the Invention

A control method for monitoring a fuel cell stack in a fuel cell system in which the actual voltage and actual current from the fuel cell stack are monitored. A preestablished relationship between voltage and current over the operating range of the fuel cell is established. A variance value between the actual measured voltage and the expected voltage magnitude for a given actual measured current is calculated and compared with a predetermined allowable variance. An output is generated if the calculated variance value exceeds the predetermined variance. The predetermined voltage-current for the fuel cell is symbolized as a polarization curve at given operating conditions of the fuel cell.

10 Other polarization curves may be generated and used for fuel cell stack monitoring based on different operating pressures, temperatures, hydrogen quantities.]

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